

**What is claimed is:**

- 1    1.     An IP-telephony interface circuit arrangement, comprising:  
2           a plurality of audio-endpoint devices adapted to process audio information  
3        coupled to respective audio channels; and  
4           a data gateway circuit including multiple circuit paths coupled to the respective  
5        audio channels, the multiple circuit paths adapted to process the audio information, and  
6        including an interface circuit adapted to convert the audio information between a first  
7        audio-channel format and a second IP-data format; the data gateway circuit being  
8        configured and arranged with a first interface for communicatively coupling the audio  
9        information in the second IP-data format to an IP communications link and with a  
10       second interface for communicatively coupling the audio information in the first audio-  
11       channel format to the plurality of audio-endpoint devices.
- 1    2.     The IP-telephony interface circuit arrangement of claim 1, wherein the data  
2       gateway circuit is configured and arranged to expand service to additional audio-  
3       endpoint devices.
- 1    3.     The IP-telephony interface circuit arrangement of claim 2, wherein the data  
2       gateway circuit is configured and arranged to expand service to additional audio-  
3       endpoint devices in multiples of  $2^N$ , where N is an integer.

4 4. The IP-telephony interface circuit arrangement of claim 1, wherein the data  
5 gateway circuit further includes a pair of dual SLICs for connecting up to four audio-  
6 endpoint devices.

1 5. A data gateway adapted to convert between IP and analog telephony data, the  
2 gateway comprising:

3 an IP telephony processor adapted to compress and format audio data for  
4 transmission over an IP network;

5 an IP communications port adapted to connect to an IP communications link;

6 a POTS communications port adapted to connect to a POTS link.

1 6. The data gateway of claim 5, further comprising a PCB having Codec  
2 integration software.

1 7. The data gateway of claim 5, further comprising a unit level assembly including  
2 the PCB in a housing.

1 8. The data gateway of claim 6, wherein the Codec integration software includes  
2 libraries supplied as object code.

1 9. The data gateway of claim 5, further adapted to evaluate a communications  
2 system, the gateway further comprising hardware and software tools to effect the  
3 evaluation.

1 10. The data gateway of claim 5, further comprising a developer's kit having  
2 communication links, software, hardware, and a programming interlink, the gateway  
3 being adapted to couple at least one conventional telephony device to an IP telephony  
4 network.

1 11. The data gateway of claim 5, wherein the gateway is adapted to use  
2 communications standards for VoIP.

1 12. The data gateway of claim 5, wherein the gateway is adapted to interface with  
2 Microsoft NetMeeting software.

1 13. The data gateway of claim 5, wherein the IP telephony processor is adapted to  
2 use DSP and command/control processing for compressing and formatting the audio  
3 data.

1 14. The data gateway of claim 5, wherein the IP communications port includes an  
2 Ethernet MAC/PHY chip adapted to provide access to 10BaseT Ethernet and manage  
3 flow control.

1 15. The data gateway of claim 5, further comprising a FLASH data memory for  
2 remotely programming the data gateway.

1 16. The data gateway of claim 5, further comprising a data memory that includes at  
2 least one of: FLASH memory, SRAM memory, and DRAM memory.

1 17. The data gateway of claim 5, wherein the IP telephony processor is remotely  
2 programmable.

1 18. The data gateway of claim 5, further adapted to control a plurality of telephony  
2 calls simultaneously using a ring management process.

1 19. The data gateway of claim 5, wherein the IP communications link includes a  
2 broadband link.

1 20. An IP telephony communications system comprising:  
2 a data gateway adapted to convert between IP telephony data and POTS  
3 telephony data;  
4 an IP communications link coupled to the data gateway and to an IP  
5 communications network; and  
6 a POTS link coupled to the data gateway and to a POTS communications  
7 network.